

**Abstract**

A tunable laser assembly, including a laser, a mirror, and a grating, wherein said grating is pivotably mounted between said laser and said mirror, wherein movement of said grating relative to said laser varies the wavelength of the energy emitted from the laser. A tunable laser assembly, including a laser comprising an emission surface, a top portion and a bottom portion, the cavity top portion being transparent to energy emitted from the laser, a detector positioned in the cavity, and a grating, pivotably mounted adjacent the laser, the grating cooperatively transmitting energy emitted from the laser to the detector, wherein changing the angle of the grating changes the wavelength of the energy incident upon the detector.

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